

Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Withdrawn) An antimicrobial and chemical deactivating composition for use in a liquid medium or for incorporation into a coating, structural plastic material, thin microporous membrane, textile, or sponge, said composition comprising nanosize or submicron particles of silver, silver-copper alloy, chemical compounds of copper, iron, molybdenum and zinc Pyrithione.
2. (Withdrawn) An antimicrobial composition comprising nanosize or submicron size silver, silver-copper alloy, copper, iron, molybdenum and zinc Pyrithione as a powder, dispersion or an encapsulated composition with a suitable polymeric hydrogel selected from a group of acrylates, hydrophilic polyurethanes, polyvinyl alcohol, natural biopolymers, polyacetic acid, and acrylamides.
3. (Cancelled)
4. (Withdrawn) A method for reducing the exposure to, or for deactivating chemical and biological warfare agents, and other toxic organic vapors at the surfaces of materials, comprising incorporating an antimicrobial and a chemical deactivating agent in porous fluropolymers with a sandwich layer or crosslinked polyvinyl alcohol or vinylalcohol copolymers with plasticizers and additives with the cross linking agents glyoxal, formaldehyde, and titanium triamino isopropoxide.
5. (Currently Amended) An antimicrobial, chemical protective and chemical agent deactivating material comprising:
a laminating layer free of activated carbon ~~or~~ for providing a physical barrier to chemical vapors while permitting moisture to pass through said layer;

a chemical deactivating composition free of activated carbon deposited on said laminating layer, said chemical deactivating composition comprising 5 to ~~16~~ 25 percent by weight of a chemical deactivating formulation, 0 to 10% by weight of titanium oxide and 0 to 20 percent by weight of a plasticizer blended with a carrier polymer or other carrier material, said carrier polymer or other carrier material comprising ~~75~~ 64 to 95 percent by weight of the chemical deactivating composition, said chemical deactivating formulation comprising:

~~5 to 25~~ at least 25 percent by weight of nanosize metallic silver particles of between 1 and 100 nanometers ~~selected from the group consisting of silver and silver-copper alloys;~~

~~15 to 60~~ at least 66 percent by weight of metal compounds selected from the group consisting of titanium, copper, Molybdenum, silver, copper, vanadium, manganese, zinc and iron;

0 to 3 5 percent by weight of organic tertiary amine bearing compounds; and

~~0 to 1 percent by weight of inert materials selected from the group of montmorillonite and tale;~~ and

0 to 3 4 percent by weight of citric acid;

an antimicrobial composition free of activated carbon deposited on said chemical deactivating composition, said antimicrobial composition comprising ~~5~~ 4 to 25 percent by weight of an antimicrobial formulation, ~~3~~ 0.2 to ~~5~~ 6.6 percent by weight of zinc pyrithione and 0 to 23 percent by weight of a plasticizer blended with a carrier polymer or other carrier material, said carrier polymer or other carrier material making up ~~47~~ 75 to 92 percent by weight of the antimicrobial composition, said antimicrobial formulation comprising:

5 to ~~27.5~~ 20.5 percent by weight of nanosize metallic particles of between 1 and 100 nanometers selected from the group consisting of silver and silver/copper alloys;

15 to ~~46~~ 48 percent by weight of one or more metal compounds selected from the group consisting of oxides, phosphates, citrates, pyrithione and salicylates of silver, copper, zinc and bismuth;

0 to ~~40~~ 15 percent by weight of sodium compounds selected from the group consisting of salicylate and triphosphate; and

0 to 80 percent by weight of parabenzoic acid esters.

6. (Cancelled)

7. (Withdrawn) The antimicrobial and chemical deactivating material of claim 5 further comprising an assembly of positively charged polymers self assembling with negatively charged polymers to form a water insoluble electrostatic barrier.

8. (Withdrawn) The antimicrobial and chemical agent deactivating material of claim 5 wherein said laminating layer comprises polyvinylalcohol applied to an expanded microporous Poly tetrafluoro Ethylene film wherein the polyvinyl alcohol is cross linked.

9. (Currently Amended) A chemical protective and chemical agent deactivating material comprising:

a laminating layer free of activated carbon for providing a physical barrier to chemical vapors while permitting moisture to pass through said layer;

a chemical deactivating composition free of activated carbon deposited on said laminating layer, said chemical deactivating composition comprising 5 to 16 ~~25~~ percent by weight of a chemical deactivating formulation, 0 to 10% by weight of titanium oxide and 0 to 20 ~~23~~ percent by weight of a plasticizer blended with a carrier polymer or other carrier material, said carrier polymer or other carrier material comprising ~~75~~ 64 to 95 percent by weight of the chemical deactivating composition, said chemical deactivating formulation comprising:

~~5 to 25~~ at least 25 percent by weight of nanosize metallic silver particles of between 1 and 100 nanometers ~~selected from the group consisting of silver and silver-copper alloys;~~

~~15 to 60~~ at least 66 percent by weight of metal compounds selected from the group consisting of titanium, copper, Molybdenum, silver, copper, vanadium, manganese, zinc and iron;

0 to ~~3~~ 5 percent by weight of organic tertiary amine bearing compounds;

~~0 to 1 percent by weight of inert materials selected from the group of montmorillonite and talc; and~~

0 to ~~3~~ 4 percent by weight of citric acid.

10. (Cancelled).

11. (Withdrawn) The antimicrobial and chemical agent deactivating material of claim 9 further comprising an assembly of positively charged polymers self assembling with negatively charged polymers to form a water insoluble electrostatic barrier.

12. (Withdrawn) The antimicrobial and chemical agent deactivating material of claim 9 wherein said laminating layer comprises polyvinylalcohol applied to an expanded microporous Poly tetrafluoro Ethylene E film wherein the plasticized polyvinylalcohol layer is cross-linked.

13. (Previously Amended) An antimicrobial and chemical protective material comprising:

a laminating layer free of activated carbon for providing a physical barrier to chemical vapors while permitting moisture to pass through said layer;

an antimicrobial composition free of activated carbon deposited on said laminating layer, said antimicrobial composition comprising ~~5~~ 4 to 25 percent by weight of an antimicrobial formulation, ~~3-0.2~~ to ~~6-6~~ 5 percent by weight of zinc pyrithione and 0 to 23 percent by weight of a plasticizer blended with a carrier polymer or other carrier material, said carrier polymer or other carrier material making up ~~75~~ 47 to 92 percent by weight of the antimicrobial composition, said antimicrobial formulation comprising:

5 to ~~27-5~~ 20.5 percent by weight of nanosize metallic particles of between 1 and 100 nanometers selected from the group consisting of silver and silver/copper alloys;

15 to ~~46~~ 48 percent by weight of one or more metal compounds selected from the group consisting of oxides, phosphates, citrates, ~~pyrithione~~ and salicylates of silver, copper, zinc and bismuth;

0 to ~~40~~¹⁵ percent by weight of sodium compounds selected from the group consisting of salicylate and triphosphate; and
0 to 80 percent by weight of parabenzoic acid esters.

14. (Cancelled).

15. (Withdrawn) The antimicrobial and chemical agent deactivating material of claim 13 further comprising an assembly of positively charged polymers self assembling with negatively charged polymers to form a water insoluble electrostatic barrier

16. (Withdrawn) The antimicrobial and chemical agent deactivating material of claim 13 wherein said laminating layer comprises polyvinylalcohol applied to an expanded microporous Polytetra fluoro ethylene film wherein the polyvinylalcohol layer is cross-linked.

17. (Withdrawn) An antimicrobial and chemical deactivating mixture comprising:
catalytic material for providing chemical deactivation;
an antimicrobial;
polyvinyl alcohol;
wherein said catalytic material, antimicrobial and polyvinyl alcohol are blended to form said mixture.

18. (Withdrawn) An antimicrobial and chemical deactivating material comprising:
a laminating layer of plasma treated polyvinyl alcohol for providing a physical barrier to chemical vapors while permitting moisture to pass through said layer;
catalytic material deposited on said laminating layer to provide chemical deactivation;
an antimicrobial deposited on said catalytic materials.

19. (Withdrawn) The antimicrobial and chemical deactivating material of claim 18 wherein said laminating layer, said catalytic material and said antimicrobial are carbon free.

20. (Withdrawn) An antimicrobial and chemical deactivating textile finish coating comprising:

polyurethane;

an antimicrobial blended with said polyurethane.